

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application.

COMPLETE LISTING OF THE CLAIMS:

Claims 1-28 : (Canceled)

Claim 29 : (New) A transmitter for an optical RZ-DPSK communication signal, comprising:

a source for an optical carrier;

an electro-optical modulator having at least one element with an optical path length modified by an electrical driver signal for intensity modulating the optical carrier based on the driver signal; and

a driver circuit for generating the driver signal from an electrical communication signal, wherein the driver signal is an impulse-type signal having impulses of two types spaced in time by a neutral signal state, wherein the impulses of the two types have opposite signs, wherein during the neutral signal state of the driver signal, a transmission of the modulator becomes zero, and the two types of impulses cause the transmission of the modulator to be different from zero and a phase shift which is specific for each type of the impulses, wherein the driver circuit comprises four pairs of switches, each having first and second main ports and a control port, and wherein in each pair, the first main ports of the switches are connected to each other and the control ports of the switches are supplied with mutually inverse input signals.

Claim 30 : (New) The transmitter of claim 29, wherein the specific phase shifts differ by π .

Claim 31 : (New) The transmitter of claim 29, wherein the modulator is an interferometer having arms, wherein the optical path length of at least one of the arms is controllable by the driver signal, and wherein a neutral signal level corresponds to a path length difference between the arms of half of a carrier wavelength of the optical carrier.

Claim 32 : (New) The transmitter according to claim 31, wherein two conductors are used for transmitting the driver signal, wherein the impulses of a first type are transmitted on a first of the conductors, and wherein the impulses of a second type are transmitted on a second of the conductors.

Claim 33 : (New) The transmitter of claim 32, wherein the two arms each comprise the element having a controllable optical path length, the first of which is connected to the first of the conductors and the other of which is connected to the second of the conductors.

Claim 34 : (New) The transmitter according to claim 29, wherein the driver circuit comprises a difference circuit for forming a pre-coded signal representative of a difference between subsequent bits of the electrical communication signal, and wherein the driver signal is derived from the pre-coded signal.

Claim 35 : (New) The transmitter of claim 34, wherein the difference circuit comprises an XOR-gate and a flip-flop.

Claim 36 : (New) The transmitter of claim 29, wherein, in a first and second pair, the second main ports are connected to two output ports of the driver circuit, and, wherein, in a third and fourth pair, one of the second main ports is connected with one of the two

output ports, and the other second main port is connected to the first main ports of the first and second pairs, respectively.

Claim 37 : (New) The transmitter of claim 36, wherein the input signal of the first and second switch pairs is a clock signal, and wherein the input signal of the third and fourth switch pairs is a pre-coded signal formed by a difference circuit of the driver circuit.

Claim 38 : (New) The transmitter of claim 29, wherein, in a first, second and third one of the pairs, the second main port is connected to two output ports of the driver circuit, and in a fourth one of the pairs, the common first main port is connected to a supply voltage, and each of the second main ports is connected to one of the common first main ports of the first and second pairs, respectively.

Claim 39 : (New) The transmitter of claim 38, wherein the input signal of the first, second and third switch pairs is a pre-coded signal formed by a difference circuit of the driver circuit, and wherein the input signal of the fourth switch pair is a clock signal.

Claim 40 : (New) The transmitter according to claim 29, and a controller for varying a ratio between a duration of the impulses and a duration of the neutral signal state.

Claim 41 : (New) The transmitter of claim 40, wherein the controller is a mono-flop located in a clock line of the driver circuit.